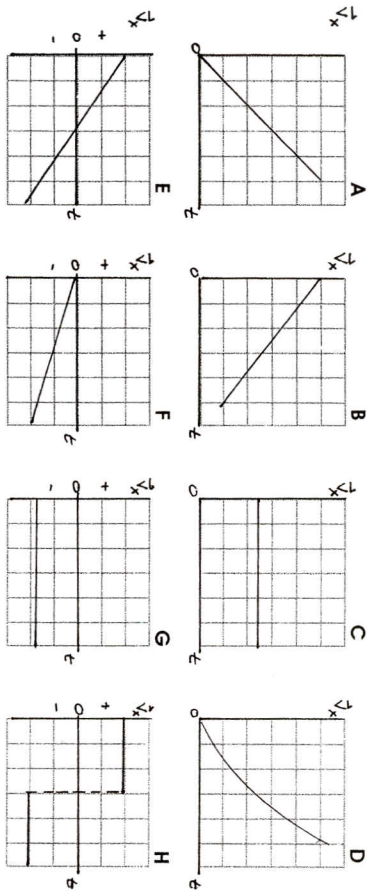


ASSOCIATING MOTION WITH VELOCITY-TIME GRAPHS

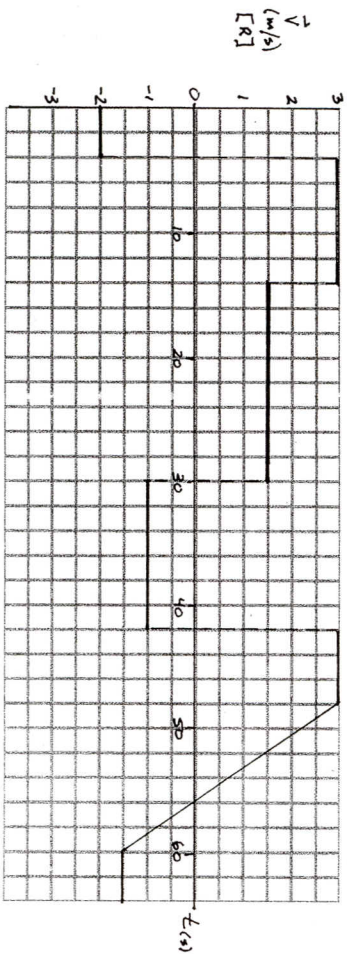
PART A

The graphs below depict the velocity of various objects over time. Identify which of the graphs could represent the motion of the object described in each of the given situations:



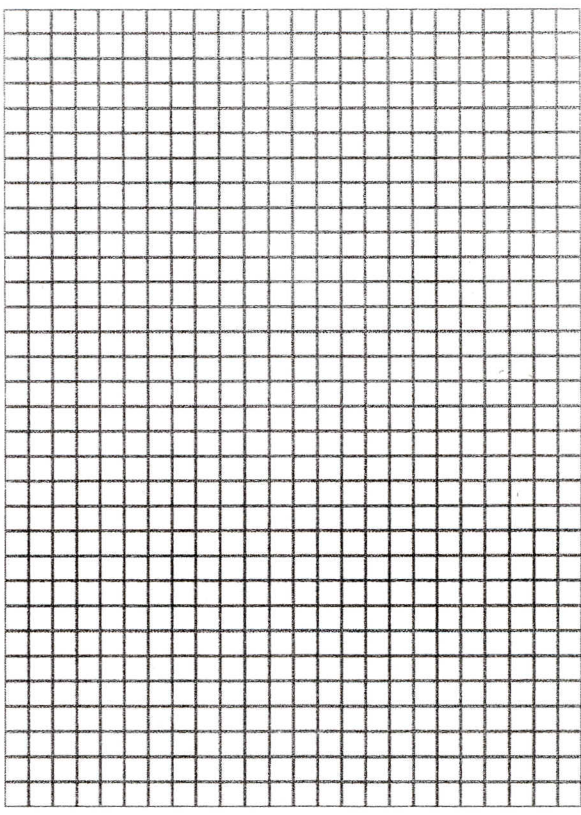
1. A marble rolls uniformly along a horizontal surface away from the origin.
2. A book is dropped, from rest, from a height of 1 m above the floor. Take the reference point to be at floor level.
3. A ball bearing is released from the top of a ramp. Assume that motion down the ramp is positive.
4. A basketball is thrown straight up into the air. Take ground level as the reference point.
5. A ball rolls uniformly along a horizontal surface. It strikes a wall and rebounds to the origin at approximately the same speed as before.
6. A ball (how original!) rolls onto a carpet, eventually stopping.

Use the graph below for PART B #8



PART B

7. Sketch the position-time graphs that would correspond with the above velocity-time graphs.
8. The following graph represents the motion of a model "chew-chew" train travelling down a straight (not wiggly) section of track. (*bottom of previous page*)
 - a. Assuming that the train was at the reference point at $t=0$ s, derive the corresponding position-time graph.
 - b. Determine the average acceleration between $t=0$ s and $t=40$ s.
 - c. Determine the average acceleration between $t=4$ s and $t=34$ s.



From Part A